

REVISION OF JOINVILLEA (JOINVILLEACEAE)  
PACIFIC PLANT STUDIES 37

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In his recent monograph of the genus Joinvillea, Newell (1969: 529) evaluated the original publication of it by Gaudichaud, and rejected the genus and its two effectively published binomials as invalid. This rejection is here challenged.

After making his second world voyage, this one in La Bonite, Gaudichaud returned to Paris and at the Museum d'Histoire Naturelle undertook the study of and the publication on his botanical gatherings. It is clear that he spent much time at it, and that he found in his collections many new species and genera. Skilled illustrators at the Museum prepared large habit drawings and accompanying detailed flower and fruit analyses. These were engraved, totaling 150 folio plates. Cooperating authors were Leveillé for the fungi; Montagne for the algae, lichens, mosses, and hepatics; and Spring for the Tycopodiaceae. Gaudichaud was an experienced, competent systematist, but midway in his research he lost interest in systematic botany and shifted all his attention and energy to the study of morphogenesis and his new theory of it. This theory was fantastic, and was vigorously opposed by his contemporaries, and is ignored by his successors.

Gaudichaud's Atlas of botanical plates of the Bonite Voyage was published in parts, between 1841 and 1852. There is a brief table of contents, and the legend on the plates gives solely the binomials. There are no diagnoses, no citation of specimens, and no localities. During the 19th Century most botanists accepted these taxa of Gaudichaud as validly published, though there were no generally accepted international rules of nomenclature at the time. Since 1905 we have had the ICBN and its slightly modified successors. We now must judge the genus Joinvillea and the species J. ascendens and J. elegans by these rules. Newell and Stone (1967: 193) reject the genus

of Gaudichaud, and the two species, because there were no diagnoses or references to previous descriptions, and because the genus was not monotypic. Newell in his monograph (1969: 193) does the same.

It is agreed that this generic name and the epithets have no descriptions and no references to a previously printed one. However, the status of J. ascendens needs a reconsideration. It appears solely on plates 39-40, as figures 1-6 which show short sections of a stem, a sterile shoot, and short cross sections of a part of a leaf. Under ICBN (1972: Art 44), "The name of a species or an infraspecific taxon published before 1 Jan. 1908 is validly published if it is accompanied only by an illustration with analysis showing essential characters." No flowers or fruits or other essential parts were shown on Gaudichaud's plate for this species. Hence, J. ascendens Gaud. was not validly published. Consequently, it is illegitimate, and has no status in nomenclature. The ICBN (1972: Art 45) rules that, "For purposes of priority only legitimate names and epithets are taken into consideration." As a consequence, J. ascendens Gaud. has no standing, and legally does not exist. That elimination leaves Joinvillea Gaud., as originally published, with the single species, J. elegans Gaud., and its illustration contains figures 7-9 of the stem, leaves, and inflorescence, and figures 10-26 of detailed analyses of the flowers, fruit, and their sections, but there is no scale of magnification, and no statement as to the degree of enlargement. The plates are unsigned. Consequently, under the ICBN (1972: Art 42) the genus Joinvillea Gaud., and J. elegans Gaud. (1841) are validly published. This causes a revision in the status of J. plicata as accepted in Newell's monograph.

#### Joinvilleaceae

Joinvillea elegans Gaud., Voy. La Bonite, Bot. Atlas pl. 39-40, figs. 7-26, 1841.

J. plicata (Hook. f.) Newell & Stone, Taxon 16: 193, 1967; Newell, Journ. Arn. Arb. 50: 550, 1969.

Flagellaria plicata Hook. f., Journ. Bot. Kew Gard. Miscel. 7: 200, pl. VIII, 1855.

subsp. elegans

Lectotype, New Caledonia, Ile des Pins, Macgillivray 770 (K), designated by Newell (1969: 551).

Distribution: Fiji, Viti Levu, Vanua Levu, and Taveuni; New Caledonia, Ile des Pins; New Hebrides, Aneityum; Solomon Islands, Santa Ysabel, Guadalcanal, and San Cristobal.

Upon the assumption that all the plants described in Gaudichaud's Botanical Atlas of La Bonite must have been collected by Gaudichaud at places visited by the vessel, Newell and Stone (1967: 194) express doubt as to the type locality of J. elegans, as it is not known at any of the places visited on this voyage. Later, Newell (1969: 552) suggests that, "a specimen was probably sent to Gaudichaud. However, he may have collected it on a previous visit to the New Caledonian area."

In fact, he had not made such a visit.

Gaudichaud of course studied his own collections made on the La Bonite voyage, but he also compared and studied other collections available in the Paris herbarium. For instance, he published in that same Atlas several species of Pandanus, and others in ten segregate genera, all of which are now reduced to Pandanus, as follows:

Gaudichaud's Genera and Species Based on Specimens Gathered by Other Collectors

Tuckeya candelabrum Gaud., pl. 26, figs. 10-20.

(Nigeria), not visited by Gaudichaud. Collector unknown.

Heterostigma Heudelotianum Gaud., pl. 25, figs.

15-31. Senegambie (=Senegal), Heudelot.

Roussinia indica Gaud., pl. 21, figs. 1-9.

Ile des Indes (=Nicobar), not visited by Gaudichaud.

Tuckeya candelabrum Gaud., pl. 26, figs. 10-20.

(Nigeria), not visited by Gaudichaud. Collector unknown.

Barrotia diodon Gaud., pl. 13, figs. 9-14.

Calcutta, Wallich. = Pandanus furcatus Roxb.

Bryantia butyrophora Webb. in Gaud., pl. 20, figs. 1-15. = Pandanus conoideus Lam. Ceram & Amboina, not visited by Gaudichaud.

Dorystigma madagascariense Gaud., pl. 31, figs. 12-13. Madagascar, collected by Richard.  
= Pandanus madagascariensis Warb.

Eydouxia ? Delessertii Gaud., pl. 18, figs. 7-8. Ile de la Réunion, Collected by Ach. Delessert.  
= Pandanus Delessertii Warb.

Sussea conoidea Gaud., pl. 24, figs. 1-12. Madagascar, collected by Bernier, Pervillé.

Vinsonia drupacea Gaud., pl. 31, figs. 8-11. Ile de France (=Mauritius)., collector Richard.

V. elegans Gaud., pl. 17, figs. 12-13.  
ex coll. Delessert.

V. palustris Gaud., pl. 17, figs. 18-23. Mauritius ?; collector A. Richard.

V. sylvestris Gaud., pl. 17, figs. 16-17. ex col. A. Richard.

V. Pervilleana Gaud., pl. 31, figs. 1-7. Madagascar, collector, Pervillé.

It is clear that J. elegans Gaud. was based upon one or more collections by botanists other than Gaudichaud. However, no identifiable original type is now found in the herbaria of either Paris or Geneva.

subsp. Bryanii (Christophersen) comb. nov.

J. Bryanii Christophersen, Bishop Mus., Bull. 128: 44-46, fig. 6, 1935.

J. plicata (Hook. f.) Newell & Stone, subsp. bryanii (Christophersen) Newell, Journ. Arn. Arb. 50: 552-3, 1969.

Holotype: Western Samoa, Savaii, Aopo, 900-1,000 m elev., 7 Dec. 1931,

E. Christophersen 2,714 (BISH).

Distribution: Samoa, Savaii.

J. ascendens Gaud. ex Brongn. & Gris, Soc. Bot.

France, Bull. 8: 269, 1861; Wawra, Flora 58: 248, 1875; Hbd., Fl. Haw. Is. 447-8, 1888 (as adscendens).

Holotype: Insulis Sandwicensibus, insula Kauai dicta, Remy 156A (P).

J. Gaudichaudiana Brongn. & Gris, Soc. Bot.

France, Bull. 8: 269, 1861; Ann. Sci. Nat.

Bot. V, 1: 337, 1864.

Holotype: Insulis Sandwicensibus, insula Kauai dicta, Remy 156A (P).

Distribution: Hawaiian Islands, on Kauai, Oahu, Molokai, Maui, and Hawaii.

As has been discussed, J. ascendens as first published in 1841 by Gaudichaud was invalid. It was accepted as Hawaiian, and provided with a description in 1861 by Brongniart and Gris who attributed it to Gaudichaud, and also announced a second Hawaiian species, J. Gaudichaudiana. In the publication by Hillebrand (1888: 447-8) and that by Newell (1969: 546-7) it was agreed that there is but a single Joinvillea species in the Hawaiian Islands. Hillebrand used for it an orthographic variant of the epithet, J. adscendens, and credited it to Gaudichaud in the La Bonite Atlas. Under it he reduced J. Gaudichaudiana Brongn. & Gris (1861) to synonymy. Since J. adscendens Gaud., sensu Hillebrand, is legally J. ascendens Gaud. (1841), a binomial validated by Brongniart & Gris in 1861, clearly Hillebrand's choice of J. ascendens Gaud. ex Brongn. & Gris, puts J. Gaudichaudiana Brongn. & Gris (1861) as the synonym, and establishes J. ascendens as the chosen name.

In Remy's collection number list under the number 156 there are two entries:

156 Joinvillea Gaudich Hawaii, Maui, Molokai.

" Kauai ou Nihau, Oahu.

For J. ascendens, Brongniart and Gris (1861: 269) chose as the holotype Remy 156A, from Kauai.

subsp. borneensis (Beccari) Newell, Journ. Arn. Arb. 50: 549, 1969.

J. borneensis Beccari, Nelle Foreste di Borneo 198, 1902; Merrill, Enum. Philip. Fl. Pl. 1: 190, 1903; Backer, Fl. Males. I, 4: 245, 1951.

J. malayana Ridl., Asiat. Soc. Straits Br., Journ. 44: 199, 1905; Fl. Malay Penin. 4: 368, 1924.

Lectotype: Sarawak, Gunong Wa, Nov. 1866, U. Beccari 2,816 (FI), chosen by Newell (1969: 549).

Distribution: Philippines, Jolo, and Palawan, Sabah, Sarawak, Kalimantan, Sumatra, Ponape.

subsp. glabra Newell, Journ. Arn. Arb. 50:  
550, 1969.

Holotype: New Caledonia, Plateau de Dogny,  
edge of gallery forest, 950 m elev., Oct.  
1966, T. K. Newell 196 (BISH).

Distribution: New Caledonia.

subsp. samoensis Newell, Journ. Arn. Arb. 50:  
548, 1969.

J. Gaudichaudiana Brongn. & Gris, var.

samoensis (Newell) Deg. & Deg., Fl. Haw.  
fam. 53a, 3/31/1973.

Holotype: Samoa, Upolu, Lake Lanutoo Crater,  
700 m elev., 26 Oct. 1966, T. K. Newell  
(BISH).

Distribution: Samoa, Savaii and Upolu.

#### Bibliography

- Brongniart, A. & A. Gris, 1861. Note sur le genre  
Joinvillea de Gaudichaud et sur la famille des  
Flagellariées, Soc. Bot. France, Bull. 8: 264-269.
- Newell, Thomas K., 1969. A Study of the Genus  
Joinvillea (Flagellariaceae). Journ. Arn. Arb.,  
50: 527-555, figs. 1-6.
- Newell & B. C. Stone, 1967. Flagellaria  
(Chortodes) plicata Hooker fil. is a Joinvillea.  
Taxon 16: 192-194.